Measures to Reduce Airway Events in the Post Anesthesia Care Unit

Staci Eguia, MSN, RN, CCRN, Imelda De Castro, BSN, CMSRN, Jino Mathew, BSN, RN, Sherly Koshy, BSN, RN, CVRN, Joy Marukot-Vito, BSN, RN, CCRN, Jocelyn Roan, BSN, RN, CPAN, Zosimo Tungpalan, BSN, RN, CMSRN, Minaz Momin, BSN, RN, BC, Sheela Menezes, MSN, RN, CMSRN & Kunjumol Saban, MSN, RN, CCRN

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

Background

In a large oncology Post Anesthesia Care Unit (PACU), nurses sought to evaluate interventions that could lead to a reduction in emergent airway events. A group of senior nurses collaborated with the Anesthesia Medical Director, Quality Improvement Specialist and clinical nurses to evaluate all airway events reported in PACU in fiscal year 2017. After reviewing the report, an airway-auditing tool was created, and, monthly action items for team members. Best practice guidelines were also established for monitoring patients for potential airway events in the PACU.

Objectives

The aim of this project was to reduce the number of airway events by 5% in PACU from FY17 to FY18.

Planning

- Collaborated with multidisciplinary team
- Reviewed all airway events reported in the event reporting system for FY17
- Established set criteria by event type
  - Anesthesia event
  - Complication of surgery r/t anesthesia
  - Airway management
  - Respiratory failure requiring unplanned support
  - Unplanned use of a reversal agents

Intervention

- Provided education to all nurses regarding the use of capnography and established PACU standards per ASPAN guidelines
- Provided skills checkoff and accountability statement to all clinical nurses
- Monthly staff in-services and education provided on measures to promote lung expansion, EtCO2 monitoring, and escalation process
- Monthly audit tools tracked compliance with capnography monitoring
- Audit tool results shared monthly with PACU team
- Action items implemented based on audit tool findings

Skill Verification Form
Explained to the patient and family the rationale for the use of CapnoFlex LF CO_2
How to Activate Exhaled CO2: 1. Connect the Exhaled CO_2 sampling line to the monitor using the white clip end, the other end connects to the mask 2. The Exhaled CO_2 parameter window will appear on the Dash Display 3. Demonstrate Correct Calibration for Expired CO_2 Module
State Established normal values (35-45 mmHg)
Describe 2 nursing interventions for elevated *(Nurse must demonstrate critical thinking skills r/t CO2 monitoring)*
Apply the oxygen delivery device to the patient CO_2
How to Discontinue Expired Co2 Monitoring:
1. Disconnect the sampling line from the monitor parameter window will clear 2. Demonstrate how to adjust Expired CO_2 alarm limits
Troubleshooting: 1. Message indicates Cannula not connected (connect Cannula) 2. The cannula is blocked (replace cannula) 3. Module was calibrated without the cannula connected (connect the module and calibrate)

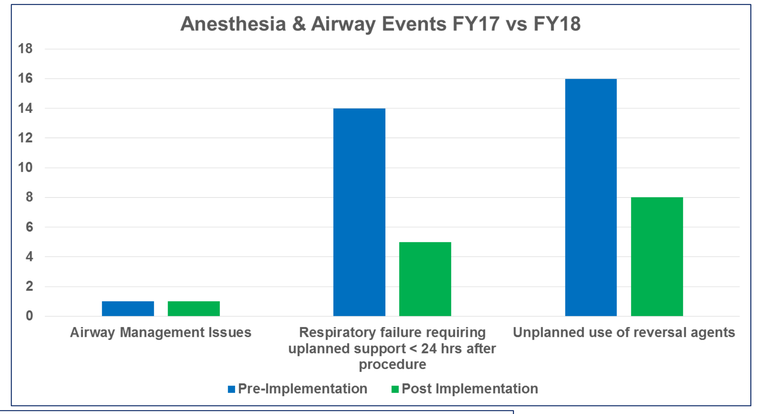
Capnography Audit Tool
Audit Items
1. Is there a baseline EtCO2 recorded for this patient within 30 minutes of arrival to the unit? (*Current area where you are auditing)
2. Is the observed or audited value normal or abnormal?
3. Is capnography currently displayed on the Dash Monitor? *If No, skip to #6. Do not answer #4 & #5.
4. Is the EtCO2 alarming? *If Yes, then processed to #5
5. If EtCO2 is alarming, is there a noted nursing intervention?
6. Are airway supplies available (ambu bag/oral airway)?
7. Is suction set up available?
8. Are capnography supplies at bedside?
Initials/Date

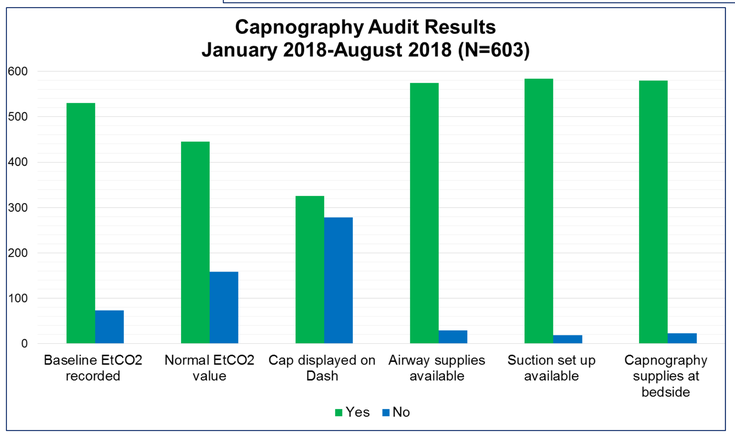
Statement of Successful Practice

Review of all airway events reported in the Safety Intelligence reporting system for FY17 yielded 31.

After establishing guidelines, staff education, use of capnography and monthly audits, the number of airway events reduced to 14 in FY18, which generated a 54% reduction of airway events in PACU within one fiscal year.

Results





Implication for Peri-Anesthesia Nursing Practice

Increased surveillance in the clinical area with airway team audit members, education to ensure understanding, competency in airway management, use of capnography, and nursing airway interventions can reduce the number of airway events in PACU.

References

1) ASPAN. (2014). *Perianesthesia nursing standards, practice recommendations and interpretative statements 2015-2017* (1st ed., p. 49). American Society of Perianesthesia Nurses.
2) Conway, A., Douglas, C. & Sutherland, J., (2014). Capnography monitoring during procedural sedation and analgesia: A systematic review protocol. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4499911/
3) Kodali, B.S. (n.d.). Capnography during sedation. *Capnography*. Retrieved from http://www.capnography.com/sedationpdf.pdf
4) Miner, J., Heegaard, W. & Plummer, D. (2002). End-tidal carbon dioxide monitoring during procedural sedation. *Academic Emergency Medicine Journal, 9*(4), 275-280.
5) Press, C. (2015). End-tidal capnography. *Medscape*. Retrieved from http://emedicine.medscape.com/article/2116444-overview#a5

Acknowledgements

Soo Ok, MSN, RN, CPAN
Cori Kopecky, MSN, RN, OCN
Elsy Puthenparampil, DNP, RN, CPAN
Jenise Rice, MSN, RN, CPAN
Alita Campbell, MSN, RN, OCN

ASPAN Conference 2019

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER